BELL TELEPHONE QUARTERLY

VOL. XVII JULY, 1938 NO. 5

CUSTOMERS AND SERVICE

THE TELEPHONE GOES DOWN TO THE SEA IN SHIPS

PROVING THE VALUE OF TELEPHONE ORDERS TO DEPARTMENT STORES

"OPEN HOUSE" AT HAWTHORNE: A FORWARD STEP IN INDUSTRIAL RELATIONS

WORLD'S TELEPHONE STATISTICS: JANUARY 1, 1937

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BELL TELEPHONE QUARTERLY

A Medium of Suggestion and a Record of Progress

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Customers and Service

THESE REMARKS BY W. H. HARRISON, VICE PRESIDENT AND CHIEF ENGINEER OF THE AMERICAN TELEPHONE AND TELEGRAPH COMPANY, WERE MADE BEFORE THE SIXTH ANNUAL CONVENTION OF THE EDISON ELECTRIC INSTITUTE, HELD AT ATLANTIC CITY, N. J., JUNE 6–9, 1938

IN these perplexing times it is satisfying to talk about service, because it is the one phase of the management job that pays returns substantially in proportion to the effort extended. The appreciation and rewards from service activities sustain enthusiasm, nourish idealism, provide stimulation.

It is this stimulation which makes me brash enough to be eager to present a discussion of service before you men who have demonstrated such high service ideals and have achieved such distinction toward service perfection. I say this with assurance, for it has been my good fortune in connection with the work of the American Institute of Electrical Engineers to see something of your activities—to observe the spirit of progress, of service, of enthusiasm for the job you have to do and the eagerness to find better ways of doing it.

I presume the day-to-day customer relationships—right-of-way, construction, installation, maintenance, repair, arrangement for new or changes in service, billing and collections, and so on—in the light and power field present many of the considerations with which we in the communications field must deal. With this similarity, it is not far afield to tell you something of our approach to the service situation. Forgive me if in this I seem much too much "Bell System"; for in a discussion like this, brevity transcends modesty.

Broadly speaking, service, good or bad, is the product of instrumentalities and of the organized effort and will of the personnel. One must complement the other. This is desir-

able in any business, but is essential in ours, where each transaction is a personal one.

Of course, good communication service would be impossible without adequate instrumentalities; and notwithstanding the really fantastic advances in ease of conversation, clarity of transmission, greater reliability, the conquest of distance—all the result of intensive and continuing search for new and improved instrumentalities—it is not my purpose to discuss the influence of these on present-day service.

I do want to say, however, that never has there been a period so productive as the present of better facilities directly involving the customer. With distance no longer a challenge, with world-wide telephony a reality, full emphasis is toward perfection in established fields. For example, present-day voice transmission systems reproduce the voice so faithfully that difficulty in understanding arises in only about two to three calls in a thousand. Similarly, present-day mechanical switching systems, with a myriad of separate connections, are capable of completing millions of calls per day with but a fraction of one per cent affected by faults in the equipment. New transmission systems permit many conversations to be held over a single pair of wires. The latest of these, employing two wires each surrounded by a tubular shield no larger than your little finger, holds promise of transmitting a frequency band of two or three million cycles, thus providing several hundred circuits, each of high quality, for the transmission of speech, or perhaps two circuits covering the entire range for television.

But all of this is an intriguing story by itself and is one that could well be related to the creation and perfection of instrumentalities in other industries, and especially so in the light and power field. For here technical and theoretical genius has been so effectively combined with genius for adaptation and application as to gain the admiration and respect of the scientific world.

I think the broad aspect of service which would be of most interest to you is that having to do with organizing the effort and will of the personnel. For in this age of scientific achievement, this art of management technique—of management's power to develop and assign responsibilities, to analyze and appraise results and causes, to interpret aims and policies, to inspire, to bring out the best in men and women—frequently is not recognized as having the force it does have in rendering adequate service.

The Power of Service Ideals and Traditions

In fact, the greatest asset in our present day service is the years of patient constructive effort that have made service ideals and traditions part of the habit of thinking of the entire organization. Manifestation of this tradition is found in every activity; it underlies every consideration of the business. You men need no reminder of the tremendous force of this.

This management technique and responsibility involve the coördination of a wide range of activities, reaching all the way from specific operating practices to the attitude of mind of the people doing the work. It takes form in methods and procedures, in knowledge of the essential facts as to performance, in the appraisal of results from the user's standpoint, in training and continuing development of the personnel in every level of the organization, in satisfactory and considerate conditions of employment, in sound employee relations.

Methods and procedures grow out of study and experience as to the most effective way of carrying on the business. They require continuous scrutiny and review. Customer habits and requirements and demands change constantly, and management must be alert to anticipate these ever-changing and increasingly exacting conditions under which service must be given.

Service betterments flow as frequently from advances in methods as they do from advances in instrumentalities. For

example, one of the most impressive and attractive features from the customers' standpoint within the past decade grew out of the development of the operating method whereby a long distance call is handled while the customer remains at the telephone. Before the introduction of this method, the average time required to handle a call was six to seven minutes, whereas the average is now but a minute and a half.

With service the function of so many interrelated activities, it is hazardous to suggest that any aspect is most important; but in our business there is general agreement that without full and continuing knowledge of the essential facts regarding just what the customer receives—what he actually experiences in using the service—management would be without its most useful tool.

Management's Most Useful Tool: Facts

Over the years, step by step, there has been developed within the Bell System information which makes available to supervision on a current and programmed basis significant and dependable facts as to just what standards of service are maintained. This information takes form in periodic results data procured on a sampling basis, and for the most part by specially selected employees not engaged in the work under scrutiny. The sampling procedures cover all day-to-day operations. They are designed to include substantially every type of contact between the customer and the company.

The separate operations under constant review and the specific data recorded are far too numerous to outline here. I think, though, a few illustrations will give you some idea of the general plan. Here is one:

A customer makes a request for new service or for change in service. Such requests are made each working day. Management should know:

1. Is all the essential information—name, street address, etc.—correctly recorded?

2. Does the customer understand charges, initial and recurring?
3. Does customer understand full uses of service?
4. Does customer have adequate services?
5. When is completion of work desired?
6. Was work done when and as requested and in manner desired?

Another operation will further illustrate. A customer makes a call from a telephone served by either a manual switchboard or a dial office. Here are the things that should be known about this call:

1. What was the time interval in seconds required to establish the connection?
2. Was any difficulty experienced?
3. What were the transmission characteristics?
4. Was the manner of the employee involved satisfactory?
5. How many calls failed of completion because the called party's line was busy, or because of no answer or slow answer or faulty operation, or for other reasons?

Take another type of operation. A customer makes some inquiry as to his bill:

1. Was the information furnished correct in every detail?
2. Was the manner of the employee satisfactory?
3. Was the customer fully satisfied with the explanation?
4. If the inquiry could not be immediately answered, was the information given within the promised time?
5. Was there any unnecessary delay in the handling of the inquiry?

Information of this sort, in a form available for ready use and on a current basis, is furnished to the supervisory forces for such action as may be necessary or desirable. No supervisor is without pertinent facts as to the work under his or her supervision.

When it is considered that 85,000,000 telephone calls are made each day, that there are 400,000 contacts in the business offices each day and 90,000 visits to a customer's home or office for installations or repair work, faulty or imperfect handling of even a fraction of one per cent of these contacts holds

potentialities of customer irritation or ill-will in hundreds of thousands of situations each day. The volume alone justifies most careful scrutiny of these service transactions.

The broad pattern of all of these results data is such as to make possible intensive and healthy competition between separate units of the System, thus providing one of the greatest of stimulants for progressive improvement—the spirit of competition. To make the comparisons equitable, and particularly to make trends significant, much of the data is reduced to a common denominator. This general procedure has the further value of bringing to bear the combined experience of all units of the System in the search for better results.

Of course, as you well understand, the value of this whole approach is not simply in setting up results data. It is in the ability of supervision to translate the indications into effective action. Management procedures—born of system-wide experience, training, leadership—accomplish this. It has been our experience that training in the fundamentals and technique of management is as essential as is the training of the craftsman. Instruction courses following the case method of procedure are a current part of the training in the various levels of supervision.

Going Beyond Technical Efficiency

In the discussion thus far and for the most part, I have been referring to operations or transactions readily susceptible of measurement—in short, to the technical phase of service. But good technical service is not enough. Service must be pleasing: the customer must be made to feel that there is personal attention for him. This is a difficult assignment to develop in a few sentences. Yet it so influences customer satisfaction that some generalization of it is necessary. The form this important requirement takes is hard to define. It is found in the tone of voice, in the expression of the eye, in the manner of speech, in cordiality of mind; in short, it is that something

'way down deep in people which moves them instinctively to do graciously those things they are called upon to do.

All of this is especially important when a customer experiences difficulty or in unusual circumstances. It manifests its presence in every conceivable fashion—and frequently, when a customer is in difficulty, it takes the form of running counter to established practices to care for an immediate situation. It is what we sometimes speak of as the tone of service, the frosting on the cake, the desire to please, service from the customer's viewpoint; finally, it is the "voice with the smile."

As you will appreciate, this kind of attitude toward the job is something that requires continuing stimulation. As a means of providing this, one of our companies recently ran a contest in which employees were urged to write about their personal experiences and ideas regarding their relations with customers. I am going to quote the article which was awarded first prize.

> "I work and live in a small community. My office serves seven small towns composed of people of varied nationality such as Polish, Slavish, Italian, Russian and Lithuanian—not to speak of the older stock like the German, Irish, Welsh and English. My work is never monotonous, but varied and interesting because I am in constant contact with so many kinds of people. Not all of them are pleasant, but it is all the more satisfying to please that kind, for it seems like a real accomplishment. Due to the limited knowledge of English which some of them possess, I often have very humorous contacts with them. It is necessary to sympathize with a mother whose children are quarantined with measles, encourage the woman whose husband or family is out of work, or rejoice with the persons whose circumstances have improved so that they can gladly pay their bills on time. When I speak to my subscribers of these things we speak a common language, one which everyone understands. We also reach the common meeting ground of human interest. This, I think, is important in the way of public relations. I try to leave with my subscribers the feeling that I, as a representative of the Bell Telephone Company of Pennsylvania, am personally interested in their lives as individuals—not just as telephone numbers. So many events in our lives to-day are treated impersonally that a little real interest

even from a stranger is inclined to create a pleasant impression. All this makes me a more alert person—a person who must never miss an opportunity to serve.

"When I can induce my subscribers to pay their bills gladly, and when I can make them understand that we are glad to serve them at any time, and that they, as individuals, are part of the great family of telephone users whose wants we try to anticipate, I think I will be helping to create good public relations between them and us."

(*By Miss Romayne Lally, Service Representative, Olyphant, Pa.*)

This typifies the service tradition, the service instinct.

Results in all this type of activity, good or mediocre, are about in proportion to the employee's interest in the job. This, in turn, reflects the ability of supervision to inspire, to enthuse, to create and sustain team play, to maintain idealism. Without satisfactory conditions of employment, without considerate treatment, and without continued sympathetic understanding and mutual respect between employees and management, there is little supervision can do.

I happen to think that in any business these days there is no more important management responsibility than this. Certainly, it is fundamental to good telephone service. As you plan for the service betterments of to-morrow and as you contemplate the conflicting aims, purposes, and objectives of the well (and other) intentioned people who seek to guide the destinies of employees, it is clear that a supreme test of employee balance and management vision lies ahead. We recognize this as a challenge to the continuance of progressively improving service. It is a challenge for every industry. But I am confident that enterprise, initiative, understanding and good sense will prevail in the future just as these characteristics have enabled men and management to care for the difficult and perplexing situations of the past.

W. H. HARRISON

The Telephone Goes Down to the Sea in Ships

FOR a person on a ship at sea actually to hold a telephone conversation with a person on the shore was, no longer than nine years ago, an event. Today, from any one of the 19,500,000 Bell System and connecting telephones in the United States, one can make telephone calls in the usual way to some 600 different boats in the coastal and harbor waters of this country as well as on the Great Lakes; perhaps more important, a person on any one of these 600 vessels can make a call to anyone at a telephone on shore. More than half of these boats are yachts and other pleasure craft, with the balance made up of tug boats, barges, fishing boats, steamships, ferry boats, pilot boats, and other commercial vessels.

Every day, people aboard these boats discuss with other people ashore, by telephone, such commonplace but important matters as are illustrated by the following fragmentary quotations, fictitious but typical:

"Proceed to Pier 18 for immediate tow of barges A and B, which are loaded with cars of perishable fruit. Can you pick up these barges in an hour and have you enough coal aboard for a 15-mile trip?"

"Our engines have broken down one mile east of Execution Light. Can you send us a tow and also 20 feet of tube to repair fuel line?"

"Hello, Margaret. We had a pleasant trip and expect to land at the yacht club dock about 7 o'clock. Please have a car at the dock to meet us. Will it be convenient to wait dinner for us?"

"Mr. Jones, this is your secretary speaking. We have advance information that there will be considerable weakening today in the franc and Mr. Smith has asked me to ascertain what action you wish taken."

"This is the trawler *Mary*. We have run into a large school of mackerel 10 miles south-southeast of Montauk Point. Suggest you notify other company trawlers operating in this vicinity to proceed here."

Ship-to-shore radiotelephone service was first put into operation in 1929 between the SS. *Leviathan* and the transmitting and receiving stations of the American Telephone and Telegraph Company in New Jersey. Today, the American Company's stations on the Atlantic and Pacific coasts provide radiotelephone service to more than a score of liners throughout their voyages on both oceans, and conversations between their passengers and persons in the United States are daily occurrences. Coastal and harbor radiotelephone service, the subject under discussion here, is entirely separate and distinct from the A. T. and T. Company's long-range service to ocean liners. As the name by which it is commonly known implies, its range is limited to the coastal and harbor waters in which coastal shipping and pleasure craft ply. It is operated by the Bell and connecting radiotelephone companies along the coasts adjoining the waters to be served. Its introduction and commercial development followed by some years the successful establishment of the much more powerful service to transoceanic vessels.

First Installation Was on Massachusetts Coast

The first Bell System coastal and harbor radiotelephone shore station was opened for commercial business at Marshfield, Massachusetts, on July 1, 1934, by the New England Telephone and Telegraph Company, after several years of experiments and tests. This station, which serves Boston harbor and coastal waters in the vicinity, is now one of a chain of eight Bell System shore stations on the Atlantic and Pacific coasts, the other seven being near New York (two stations), Norfolk, Miami, Los Angeles, San Francisco and Seattle. The Norfolk station was opened for public service on June 13, 1938. Additional shore stations are operated by connecting radiotelephone companies at Philadelphia, Pa., Lorain, O., and Lake Bluff, Ill., and these connect with any Bell System telephone.

A construction permit has been requested from the Federal Communications Commission by the Southern Bell Telephone

and Telegraph Company to build a shore station near New Orleans. Applications by the Lorain County Radio Corporation for shore stations at Port Washington, Wisconsin, and Duluth, Minnesota, are also pending before the Federal Communications Commission. The locations of these fourteen existing and pending shore stations are shown on the accompanying map (Figure 1).

The Bell System shore stations, with 400-watt transmitters, have generally an effective range of about 200 to 300 miles over water, but this range may vary materially with local conditions. The radio frequencies used are between 2100 and 2200 kilocycles for ship-to-shore channels and between 2500 and 2600 kilocycles for shore-to-ship channels. In addition, there is a ship-to-ship channel on 2738 kilocycles and a channel for calling the Coast Guard in emergencies on 2670 kilocycles. Some of the connecting radiotelephone company shore stations use higher frequencies as well. As the range over land is materially less than over water, both transmitting and receiving shore stations are located near the water's edge. The radiotelephone service is available through the shore stations on a 24-hour basis except in the case of the second New York station. Figure 2 shows the San Pedro coastal harbor station, serving the Los Angeles area, and Figure 3 the radio transmitter equipment at the same station.

Newest Shore Station Is Remotely Controlled

In the latest design of shore station equipment, the transmitter and the receiver are remotely controlled. In the case of the Norfolk station, the transmitter and receiver are located in the vicinity of Cape Henry, more than 15 miles from Norfolk. The technical operator and the traffic operator who actually handles the calls are both at the central office in Norfolk, and the equipment on the shore is controlled from this point. While a technical operator must be available at all times, the

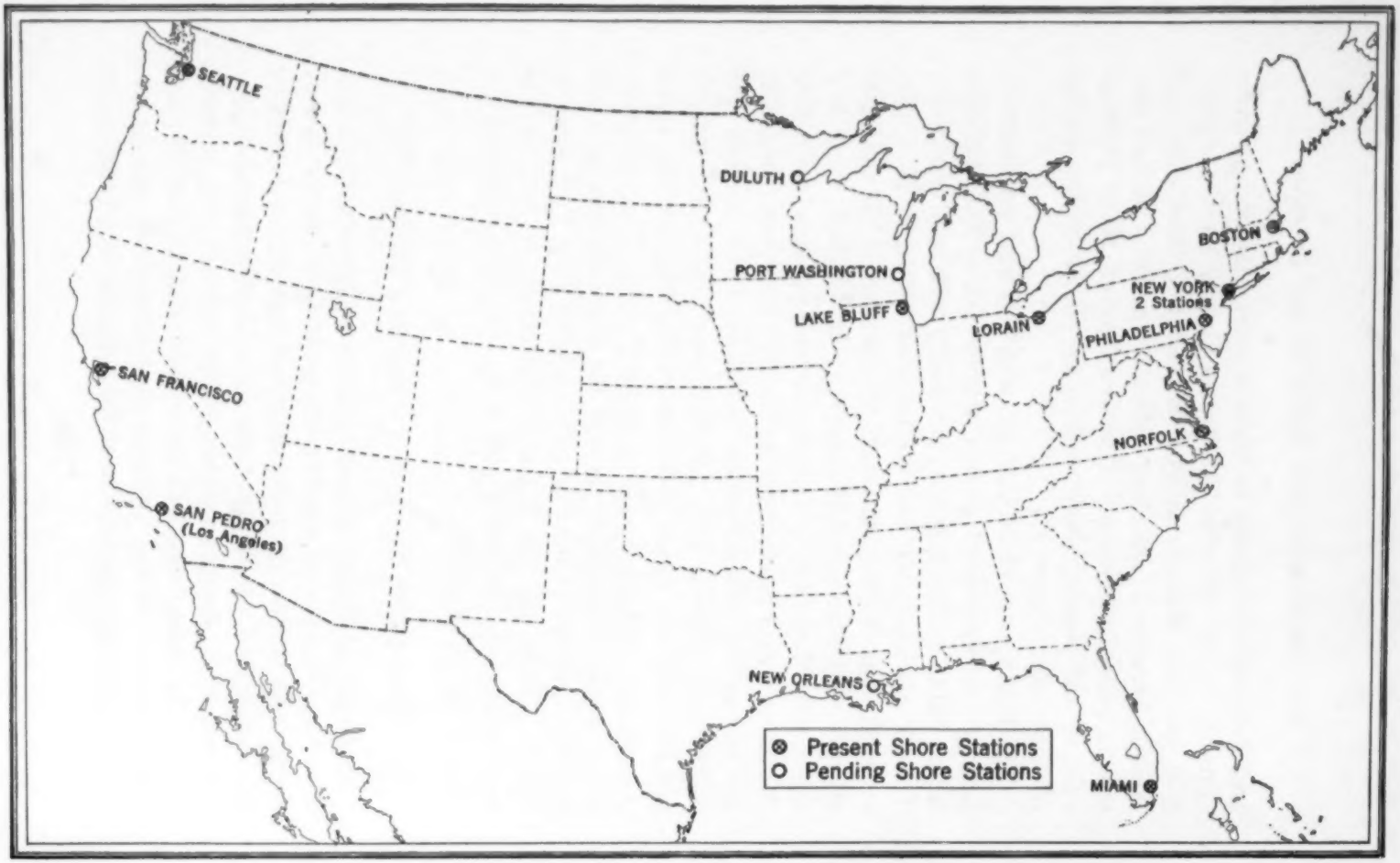


FIG. 1. PRESENT AND PENDING COASTAL AND HARBOR RADIOTELEPHONE SHORE STATIONS IN THE UNITED STATES

provision of automatic switching controls, alarms, and signals has made it possible for the systems to take on more and more the aspects of the wire telephone system. One of the new unattended radio receivers, which can be placed on a telephone pole, is shown in Figure 4.

In order to provide service to low powered radiotelephone sets on boats, several auxiliary receivers may be located at different points along the shore. For example, in giving a complete coverage at New York, there are, in addition to the main receiver at Staten Island, four unattended receivers. One of these is located near the southern part of Staten Island and the other three are located at different points on Long Island. In fact, with these receivers, all of New York harbor and practically all of Long Island Sound are in range of a 15-watt ship set.

Boat Owners Provide Their Own Sets

While the shore facilities necessary for this service are provided by Bell System companies and connecting radiotelephone companies, the radiotelephone sets on boats are provided by the owners of the boats. Over a dozen different concerns are building various types of boat sets, varying from 10 to 50 watts in power. The prices of these sets range from a few hundred to a couple of thousand dollars or more, depending on the type of set, the number of frequencies available in the set, the power of the set, and other factors. Many of the smaller sets take up scarcely more room than a medium sized home radio broadcast receiver, and the necessary power is provided by a small rotary converter which operates from the ship's power system. The range of these ship sets varies materially, but even the smaller sets can generally reach 50 miles or more over water and some of the sets have a range of several hundred miles.

The Western Electric 15-watt marine radio telephone set shown in Figure 5 weighs about 50 pounds and is only 15 inches

long. It is arranged for four different frequencies, and a hand set telephone is provided with a press-to-talk switch in the handle. The Western Electric Company also makes a 50-watt set, arranged for ten frequencies, and this has voice operated relays which eliminate the need for a press-to-talk switch. A remotely controlled radiotelephone as used in a pilot house is shown in Figure 8.

Two Classes of Service Are Available

Two classes of coastal and harbor telephone service are offered through the Bell System's shore stations: General Service and Dispatching Service. General Service covers random calls between any land telephone and any suitably equipped vessel. The rate for the radio link includes a connection with any telephone within the designated local service area of the radio terminal office. Where points on land outside the local service area of the radio terminal office are involved, the regular person-to-person charge for the land portion of the call is added to the radio link charge. This service is available to any suitably equipped boat at any time and the only charge is for the calls made.

Dispatching Service is intended for communication between vessels of one customer and one or more designated telephone stations of that customer on land, as, for instance, between the dispatching office of the owner of a fleet of tow boats and such boats. The radio link message charge for this service is for a shorter initial period and is also lower than for General Service. For this service, each boat is required to guarantee a minimum use of the service each month.

The yacht owner who has equipped his vessel with a radiotelephone finds it a great convenience to himself and his guests. The ability to keep in touch with his office by telephone may enable a yacht owner to spend many days on the water without anxiety, and many important business transactions have been

FIG. 2. SHORE STATION FOR COASTAL AND HARBOR RADIOTELEPHONE SERVICE AT SAN PEDRO, CAL.

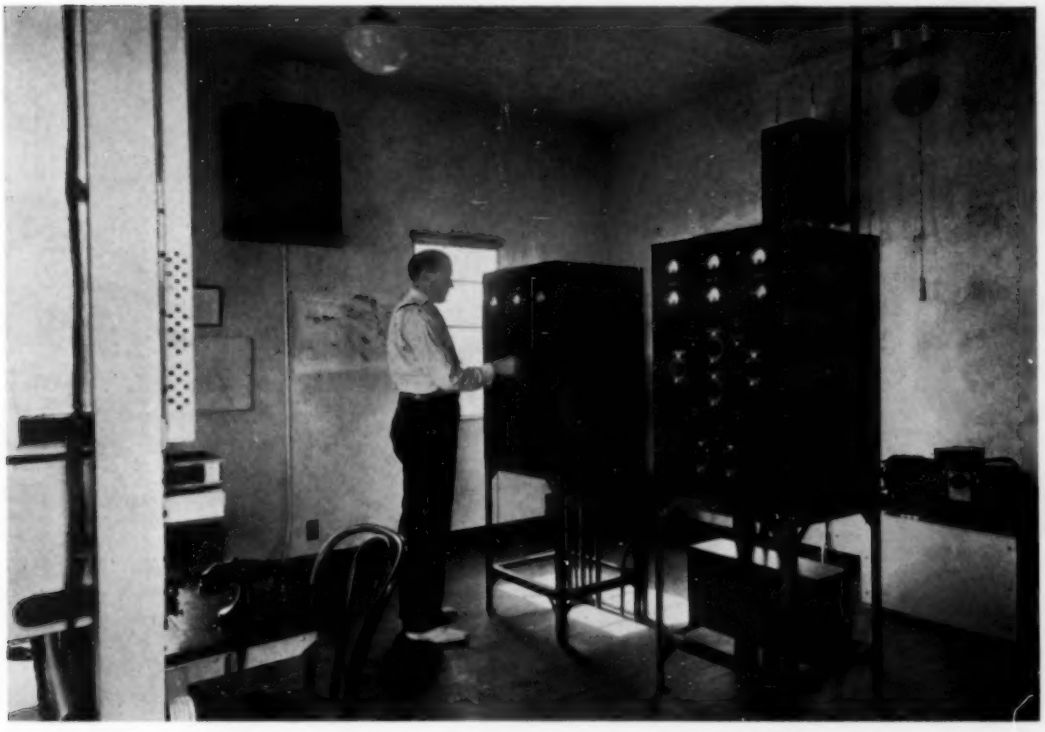


FIG. 3. RADIOTELEPHONE TRANSMITTING EQUIPMENT IN THE SAN PEDRO STATION

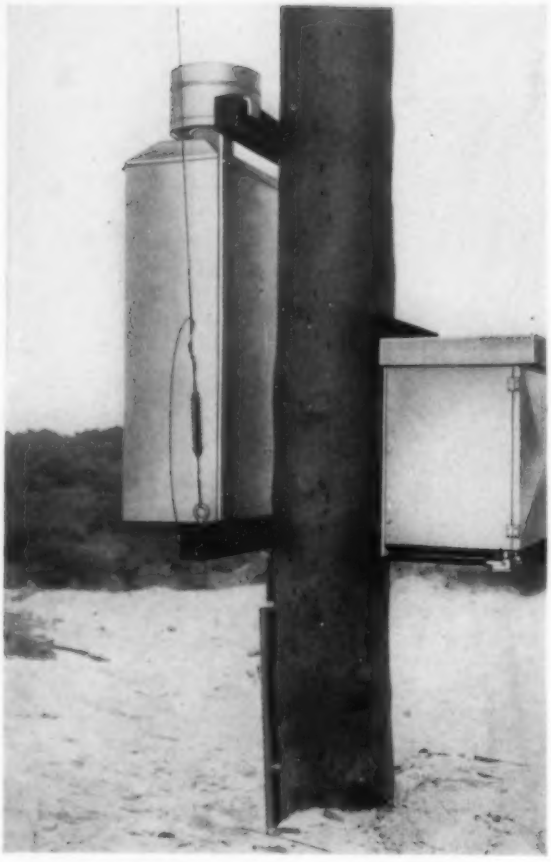


FIG. 4. REMOTELY ATTENDED RADIOTELEPHONE RECEIVING EQUIPMENT

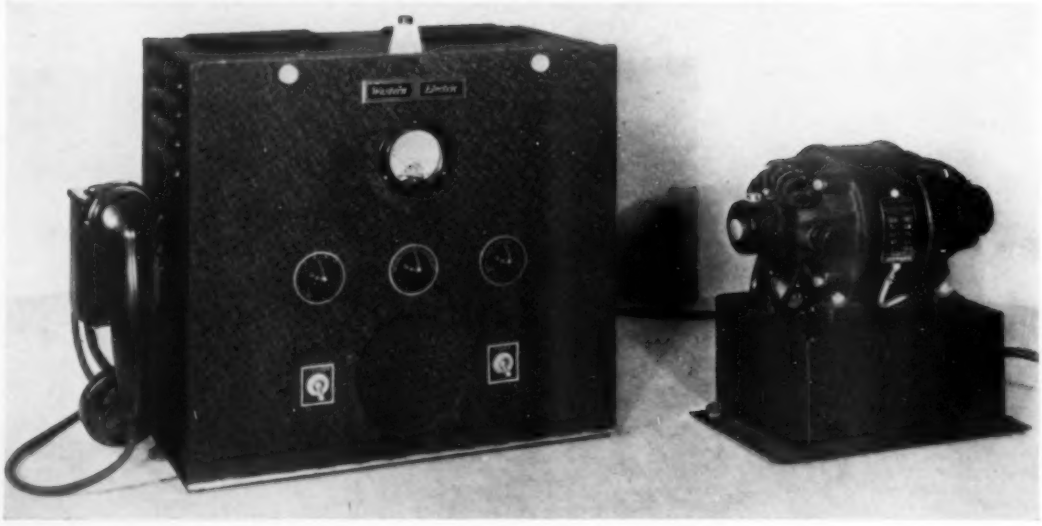


FIG. 5. THE WESTERN ELECTRIC COMPANY'S 15-WATT RADIOTELEPHONE SET FOR SHIPBOARD INSTALLATION

FIG. 6. THE 65-FOOT KETCH-RIGGED YACHT "WINSOME TWO"

FIG. 7. THE "ELDA." BOTH THESE YACHTS HAVE BEEN RADIOTELEPHONE EQUIPPED FOR MORE THAN A YEAR

FIG. 8. A REMOTELY CONTROLLED RADIOTELEPHONE IN USE IN THE PILOT HOUSE

FIG. 9. THE PILOT BOAT "SANDY HOOK," ONE OF THE TWO WHICH SERVE NEW YORK HARBOR. BOTH ARE RADIOTELEPHONE EQUIPPED

consummated by radiotelephone. Figure 6 shows the 65-foot ketch *Winsome Two* and Figure 7 the yacht *Elda,* which have been equipped with radiotelephones for more than a year. There are many uses for a radiotelephone, as in summoning assistance in cases of engine trouble or other emergency. In cases of delay in reaching a port, a telephone call to those on land relieves all anxiety.

Promotes Efficiency of Fleet Operation

Companies operating fleets of tug boats, lighters, barges or other vessels can use radiotelephone service to great advantage, as dispatching orders may be given or changed while the vessel is in operation. In this way they cut down on idle tug time and secure economy in operation. This is of vital importance to a towing company, for a more efficient use of tugs means a more profitable business. A better service to the towing companies' customers also results from the use of the radiotelephone, which minimizes delays in shipping. Assistance calls can be placed when aid of other tugs is needed on account of heavy weather or threatened danger to the tug's tow.

Figure 9 shows the New York harbor pilot boat "Sandy Hook," which makes regular use of the dispatch service; a second New York harbor pilot boat is also equipped. Here again the radiotelephone is of great value in keeping in touch with the shore at all times for passing orders, information, etc. Freighters, fishing trawlers, and other commercial craft use the radiotelephone to report their position and, in the case of the trawlers, to keep in touch with market conditions and the price of fish.

When emergencies occur at sea on a vessel equipped for radiotelephone service, the international distress signal is the call "May Day," meaning "Help, we're in distress at sea." It is the "SOS" of the radiotelephone. The words are the

English phonetic spelling of "M'aidez," which in French means "Help me."

On April 15 of this year the technical operators at the Marshfield station heard the call "May Day, May Day," followed by a voice saying "this is the trawler *Exeter*, south-southwest of Seal Island on Brown's Bank." They acknowledged the call and the *Exeter's* captain continued, "Don't know whether we can get a boat off or not—Call the Coast Guard and any boats in the vicinity—I'll try to give you the distance—Wait till I get a chart." Then followed hours of silence.

The Radiotelephone Brings Rescue

The *Exeter's* captain never returned to the telephone on board to report the exact position of his ship. Apparently he had no chance even to explain the trouble. That his ship was in urgent need of help was apparent when he said that he was uncertain whether his men would have time to launch a lifeboat. The position he reported was too vague to be of much assistance in locating him.

Keeping the monitor receiver on the *Exeter's* wavelength to pick up any further messages that might come from her, one of the station's operators jumped to a telephone and called the coast guard base at East Boston, reporting in full the message he had received from the *Exeter*. Meanwhile, the other operator reached the trawler *Hekla* at sea by radiotelephone and reported the message from the *Exeter*. The *Hekla* was fishing some miles from the vague position that the captain of the *Exeter* had reported. Within a few moments, a radio appeal in code to all ships was broadcast from the *Hekla*. The *Hekla's* operator had hardly completed the message before he picked up the broadcast for help sent out by the coast guard.

For hours there was no word from the *Exeter*. Then, just before complete darkness set in, the trawler *Illinois*, which had

heard the radio appeal for help sent out by the *Hekla,* picked up a lifeboat. In it were the nine members of the *Exeter's* crew. They had drifted for seven hours after abandoning the trawler in haste. Fire had started in the engine room of the *Exeter,* and the flames had spread with such speed that the men were forced to abandon ship within a few minutes. Not one of the nine members of the *Exeter's* crew was injured, although the vessel went to the bottom with all their personal belongings.

No Special Skill Is Required for Operation

The question is frequently asked as to whether a technical radio man is required for operation of a radiotelephone on a boat. There is no such requirement; but it is necessary to secure a third class telephone operator's license from the Federal Communications Commission, which requires only a knowledge of the laws and regulations relating to the operation of this type of equipment. Each boat also needs a ship radio station license and is assigned a station call letter by the Commission.

When a boat is first equipped with a radiotelephone set, the owner ordinarily informs the telephone company, so that the necessary information for handling calls can be posted on the company's records and an account established for service through Bell stations.

Calls from anywhere in the United States may be placed for any boat equipped for service. All that is necessary is for the calling person to give the name of the boat and its probable location, so that the call may be routed to the proper marine operator. The call is then received on the boat through a loud speaker or, if the boat is equipped with selective ringing, the bell on the boat desired is rung by the operator. The two parties are then connected over the radiotelephone and conversation takes place in the usual way.

The present coastal stations give excellent coverage from the Canadian border to the Carolinas and reach fairly well much of the remaining Atlantic and Pacific coastal waters. As the use of the radiotelephone increases in coastal and harbor waters, additional stations will doubtless be provided. Thus, with the growth in coastal and harbor service, the telephone is again expanding its usefulness and scope. Afloat, as ashore, the utility, convenience, and speed of telephone service make it an increasing aid in the furtherance of business and social contacts.

GAIUS W. MERWIN

Proving the Value of Telephone Orders to Department Stores

SAID an executive of a large metropolitan department store, in explaining its policy, "We look upon telephone service as an unavoidable operating expense that should be held at a minimum." A year later he said, "Our telephone service is a powerful medium for moving merchandise and we use it to its fullest extent." These two diametrically opposed attitudes illustrate the wide difference of opinion in the department store field regarding the importance of telephone service and the value of telephone orders. What information or experience led to such a change in viewpoint? In the answer lies an interesting story of efforts undertaken by both department store and telephone company people to throw light upon this rather controversial subject.

Some stores actively promote telephone order business (that is, orders for merchandise which are received by telephone) and certain of them have built it up to a point where it contributes as much as ten per cent of their total dollar volume. The officials of these stores hold that by promoting telephone orders they bring in much additional and profitable business that they otherwise would not get. In their advertising they feature their telephone service and solicit telephone as well as counter and mail order business. Their telephone personnel have been trained to sell instead of acting only as order takers.

On the other hand, many stores have followed a quite different policy. They have felt that telephone order business might not be profitable, that it might attract bargain hunters only. They have feared that telephone orders might keep customers out of the store, and thus make inroads on their

counter sales, which are the backbone of department store business.

This difference of opinion has been of more than passing interest to those telephone company representatives whose job it is to help business firms with their communication problems and to assist them in making the telephone a more effective, profitable and pleasing medium for the transaction of business. While stores generally appreciate the importance of satisfactory store telephone service, it not infrequently happens that the attitude of their executives toward telephone order business has an important influence on the quality of telephone service which they provide for their customers. In addition, telephone company representatives are often asked for their opinion of the value of telephone order business and for information on problems which concern sales promotion policy rather than telephone service *per se*.

The store's attitude toward telephone order business is so frequently an important factor in the planning of telephone arrangements that it seemed to the mutual advantage of the telephone companies and department stores generally to do some research work in the hope of substituting factual information for opinion or conjecture. In discussions with the management of one of the largest department stores in the country, the telephone people found them to be sympathetic to and in general agreement with such a project. In fact, they generously offered the use of their store for a study to be undertaken jointly by department store and telephone company personnel.

While the amount of time and effort involved would be considerable, it was felt that this would be well worth while in view of the broad application of the findings to department stores generally and the probable benefits not only to these stores and to the telephone companies but also to the general public, who are customers of both. A study was made in this store, ac-

cordingly, and much useful information was obtained regarding the place and value of the telephone in retail merchandising. The research work occupied about three months, and is believed to be the most comprehensive analysis in the department store field in which telephone people have taken part.

Since the original study, similar research work has been completed in other department stores. It indicates that, with possible rare exceptions, the findings of the original study apply equally to them. Feeling that these findings might be found useful by stores generally, the National Retail Dry Goods Association brought the study to the attention of its membership of over 2,000 leading department stores. The study has not only aroused interest in telephone and department store circles, but also in the advertising and educational fields, libraries, and the press.

The Practicability of Selling on Incoming Telephone Calls

The store was organized along the functional lines usual in large department stores. The telephone order department did not report to a buying or selling executive but came under the service department, which was in charge of the store superintendent. Since several departments in the store would be affected by the results of the research, the management of the store made arrangements for the participation and coöperation of all interested parties. A study group was formed, composed of two representatives from the telephone company and several from the store. The telephone people worked in the store with the store personnel assigned to the study. In this way it was possible to exchange and coördinate experience with respect to telephone service and facilities, on the one hand, with store operating and merchandising experience, on the other.

Incoming telephone calls were received at the store P.B.X. switchboard. Calls from customers were then routed to a cen-

tralized group of telephone order clerks instead of to the telephones at the various counters throughout the store. It was the practice for telephone order clerks simply to take orders or give information and make no attempt to sell. As a first step in the study, it was decided to see whether sales effort on incoming calls was practicable and whether it would increase the dollar volume of business without unfavorable reactions on costs and customer relations.

The first step was to find out why customers called the store, what they expected, and what the store did about it. The information was obtained by observers sitting beside various telephone order clerks and listening to their conversations. Their observations showed that customers called the store for any one of a number of reasons: to order or inquire about merchandise; to request the store to take back merchandise (in store parlance, "returns"); to arrange for the exchange of merchandise; to inquire about deliveries; to make appointments for fittings, demonstrations, and similar personal visits; to make complaints, and so forth. Regardless of the nature of the call, customers seemed to expect prompt, dependable, and courteous service, and there were sometimes signs of dissatisfaction in cases where calls might have been better handled. A record was made, therefore, of those things which appeared to please customers and also of those which appeared to mislead, confuse, or irritate them.

The observations also confirmed that little sales work was done by telephone order clerks, except during occasional campaigns to sell certain special items. The observers therefore made a special point of looking for and noting anything that appeared to be a sales opportunity. It soon became clear that there were many sales opportunities and that they could be classified into a number of different types, each of which would be worth exploring. Three telephone order clerks were selected as being representative of the average force. They

were assigned to the study group and asked to try various suggestions for improving sales and service. Other members of the group listened to their handling of contacts in order to observe the degree of improvement and the apparent reaction of the customers. During the trials, frequent group meetings were held to discuss progress and results.

The trials extended over a two months' period, and there was an impressive improvement in handling contacts during this period. Also, experience with desirable types of sales work began to crystallize. Some of the highlights of these trials follow.

Selling Related and Consumption Merchandise

When customers visit a store in person, it is possible to promote sales by attractive counter and window displays. Customers may handle goods. There are opportunities for counter sales clerks, demonstrators, and others to exercise good salesmanship. By these means it is possible to sell customers more merchandise than if the store were organized on the basis of merely taking orders.

What substitute might there be during customers' "telephone visits," for the sales appeal of counter and window displays? One possibility was for the telephone order clerks to "display" merchandise by telephone, by suggesting the purchase of appropriate items to customers and describing them in a clear, concise, appealing manner.

Sometimes an item the customer was ordering would indicate a need for or an interest in another item. The sales clerks assigned to the study therefore prepared lists of such pairs of items: cameras, films; paint, paint brushes; washable fabrics, soap flakes. They then used these lists as reminders for sales suggestions while handling calls at the telephone order board. Soon they acquired such facility in developing relationships that they could make suggestions in most instances without referring to the list.

Since many customers called to inquire about or order items they had seen in the store's newspaper advertisements, it was decided to give reference lists of advertised merchandise to the sales clerks in the study group. In considering the most effective set-up for the list, one study clerk suggested that the store would get more value out of each advertisement if these lists should show, for each advertised item, a description of one or more related but unadvertised items which could be suggested. For example, the description of an advertised bed sheet would be followed by a description of unadvertised pillow cases, mattress pads, and mattress covers, which included selling points which helped the order clerks to describe and sell more skillfully, such as, "won't fade," "won't shrink," "wash like new," "pads won't get lumpy." Such a list was prepared, and it was found possible, through such planning as this, to make sales.

It was thought desirable, therefore, to build up lists of merchandise for all of the frequently ordered lines. These lists seemed sufficiently important to warrant calling upon the best merchandising experience in the store during their preparation, and the study group looked to the store buyers for assistance. The buyer of children's wear was the first to respond. She selected samples of her "full line" and instructed the three study clerks in the selling points of each. As a result, at the end of a week the number of items per sale had doubled, and the study clerks' average sale of children's wear had increased in value from $2.34 to $5.01. The sales suggestions did not unduly prolong the contacts and there was definite evidence that mothers appreciated these helpful suggestions.

As a result, other buyers volunteered assistance. Some of the buyers pointed out that suggestions could not always be made on a related basis. On such occasions, it seemed that the suggestion of what is known as consumption items—*i.e.*,

those which the majority of customers purchase and use up frequently—would be most helpful. The buyers thought that such suggestions might often be made on a seasonal basis: house cleaning and storage items in the spring, toys at Christmas, school supplies in the fall. Rapid progress was made with this type of sales work.

However, it should not be assumed that the telephone can be used to move all manner of "problem goods" or to dump merchandise. For example, in this store it was learned that one buyer had found himself with a large stock of sachet which had proven unsaleable over the counter. He arranged for the item to be featured by telephone clerks. They made 900 suggestions to customers before the suggestion was discontinued, and did not secure a single order. This effort to use the telephone department to sell something which the public obviously did not want, therefore, cost the store a substantial number of sales that might have been made if the buyer's suggestion had been a sound one.

After several weeks' experience, the three study clerks were making sales suggestions on about eighty per cent of the calls handled, averaging a sale to each four suggestions, and the average amount per sale was $1.04. This proved to be an easy type of sales work to start and administer. It was found, incidentally, that the simpler suggestions, rather than the unusual or spectacular, often produced the most benefits.

Selling Larger Quantities

It seemed desirable to test the effectiveness of sales work in persuading customers to purchase larger quantities, provided such effort did not seem unreasonable or annoying to customers. With some merchandise the incentive was a reduced price to purchasers of large quantities. Sometimes a special temporary price might make it advisable for customers to "stock up." These lower prices occur during special sales, at the turn

of the season, during the introduction of a new line of merchandise, etc. Customers often need quantity replacement of items that are consumed rapidly. It was found that the quantity of an item ordered might be increased by suggesting its use by other members of the family, or as gifts or prizes.

Here again lists of merchandise, in this case including items that are ordinarily purchased in quantities, played an important part in the success of the trial. For each item listed there were shown the selling points that clerks could use in inducing customers to buy the larger quantity. For example, in persuading a customer to buy several rather than a single pair of stockings, the clerk might say, "A run in one of a pair of stockings makes the pair useless—with two matched pairs greater service can be obtained from the remaining three." It was found that the importance of testing such selling points, and then using the ones found most effective, could not be over stressed. Without such lists, the sales suggestions made by any clerk were largely limited by her imagination or personal experience; with such lists, the telephone clerks benefited from the accumulated merchandising experience of the entire store.

While it took time to build up a volume of sales suggestions of this type, the results obtained by the three study clerks during the experimental period were quite encouraging. They suggested larger quantities on about ten per cent of the calls handled, averaged about one sale to each two suggestions, and the average value added to the original order was $1.18.

Selling Higher Priced Merchandise

It had been believed in many stores that only the lowest priced merchandise could be sold by telephone. The investigators proved this to be a fallacy. During the observation period, it had been noted that clerks generally stressed a low price or "bargain" appeal during their telephone sales contacts and rarely mentioned quality, durability, and other

equally effective sales appeals. A common reply to a merchandise inquiry was "Yes, madam, we have them. They run from forty-nine cents up." The customer would often reply by requesting a description of the lower priced item, and, if it didn't sound good enough, would either ask about a higher priced item or lose interest and hang up. When a sale was made, it was usually for lower priced merchandise.

Discussions with the merchandising people indicated that the average customer visiting the store ordered merchandise well above the lowest price level, and it seemed reasonable to assume that the average telephone inquirer might be interested in similarly priced merchandise. Consequently, the three study clerks attempted to determine the most appropriate grade of merchandise to quote on telephone calls. It was found on many calls that there was some lead as to the proper grade of merchandise to quote. The most obvious one overlooked was where customers specifically requested high quality merchandise. Charge customers were found to be generally interested in merchandise well above average in quality. Customers often made remarks such as "We are going to the mountains for the summer," "It's for a party Saturday night," etc., which indicated an interest in merchandise of good quality. Still another lead was the customer's address, which, if in a high class neighborhood, indicated a potential interest in quality. Servants calling to order for their employers were quoted quality merchandise as probably better meeting their employers' desires, avoiding, however, over-selling or pressure.

In addition to preparing lists of such leads, price tests were run for various items of merchandise. This was done by quoting different prices and measuring the results in terms of per cent of sales to suggestions, number of items per sale, and average profit per sale. Hosiery prices, for example, were tested from $.50 (by $.10 advances) to $1.25 per pair and it was determined that the most effective price level was $.80.

Such a figure would vary from time to time in the store studied and also between stores, due to changes in economic conditions, differences in type of trade, etc. Enough items were studied to indicate that such price testing in the telephone order department could be used advantageously.

Of all the types of sales effort tried, this appeared to be one of the most fruitful, and was also relatively easy to administer. The three study clerks suggested higher priced merchandise on about ten per cent of the calls handled, averaged one sale to each two suggestions, and averaged an addition of $.80 to the original order. While it seemed likely that results would vary with the times, the store, the merchandise handled, and the store's clientele, this would not seem to justify inaction or indifference to the possibility of selling better quality at higher prices.

Selling Merchandise on Adjustment and Complaint Calls

A large number of telephone calls were received from customers regarding adjustments, complaints, returns, exchanges, and so forth, pertaining to counter and mail as well as to telephone purchases. During the observations, it was noted that very few customers making such calls really had "a chip on their shoulder," and in many instances would place a new order before hanging up. It was concluded, therefore, that the majority of the customers making such calls might appreciate a timely and natural suggestion and consider it helpful rather than objectionable. Subsequent trials indicated this opinion to be substantially correct, although, of course, alertness and discretion were necessary.

Many customers gave leads which enabled the study clerks to make helpful and natural suggestions. The suggestion of items timed with events and seasons of the year, and those which not only had a broad general appeal and utility but also

were attractive from a price and quality standpoint, proved to be the most generally helpful.

From the experience of the three study clerks, it appeared that sales suggestions could be made to about forty per cent of the customers on calls of this type. The ratio of sales to sales attempts was approximately twenty-four per cent and the average value per sale was about $1.50.

Converting Merchandise Inquiries Into Orders

A surprisingly high proportion of customers—about twenty per cent—call the store to inquire about a specific item of merchandise and, after receiving the information, hang up without placing an order. While some of them might subsequently place an order, it appeared worth while to see if the business could be obtained by securing more orders while the customer was on the line. Accordingly, the three study clerks tried to sell the inquiring customers instead of merely providing information. This was done by obtaining from customers a good idea of the merchandise they were interested in, making sure that it was in stock and at what price levels, describing its features clearly and concisely, and stressing the sales appeals that would justify the price and create a desire to buy it. Orders were sometimes obtained by suggesting a special order when the item in question was out of stock, not carried, or sold out. Other orders were obtained by suggesting substitutes for items that had been advertised as "no phone orders."

To be successful in this type of selling, the negotiations must be pleasing to the customer and the clerk must show a real interest in the inquiry. The three study clerks were able to make sales suggestions on about five per cent of the calls handled. Counting only the cases where the evidence was conclusive that the business had been obtained through sales effort, they averaged one sale of about $2.40 to each three suggestions.

Converting Returns Into Exchanges

Returned merchandise is considered one of the most troublesome of store problems. A large percentage of the requests to have merchandise returned are received by telephone. While stores are anxious to reduce the number of returns, they must avoid giving customers the impression that they are unwilling to handle legitimate requests.

During the observation period, it seemed in a number of instances that helpful suggestions might have been made which would have resulted in the customer either keeping or exchanging rather than returning the merchandise. It was therefore decided to make a list of all the customers' reasons for returning merchandise and then classify these reasons as "savable" or "unsavable" returns. Examples of "savable" returns were "wrong size or color or style," and "damaged goods." Examples of "unsavable" returns included "not durable," or "fades," "sent several pairs on approval, will keep only one." There were about an equal number of "savable" and "unsavable" types of returns.

The three study clerks made no attempt to save the "unsavable" returns. However, they developed considerable skill in their sales work on the "savable" types of returns. They handled a number of cases which started as returns and ended as exchanges or with the customer keeping the merchandise. It was concluded that an intelligently directed activity along these lines offered a promising opportunity for improvement.

Measuring the Effect of Selling

By the completion of the trial period, the three study clerks were using effectively the selling ideas that had been developed and proved worth while by the trial and error process. It was decided to try to determine just how much additional business might be attributed to their sales effort.

THE MODERN TELEPHONE ORDER DEPARTMENT IN ONE OF THE WORLD'S LARGEST DEPARTMENT STORES, SHOWING THEIR INSTALLATION OF NO. 4 ORDER TURRETS.

GOOD SERVICE AND A SOUND POLICY TOWARD TELEPHONE SALES ENABLED A STORE IN A CITY OF LESS THAN 200,000 POPULATION TO BUILD UP ITS BUSINESS TO A POINT REQUIRING A TELEPHONE ORDER DEPARTMENT OF THE SIZE SHOWN HERE.

The following plan was devised for obtaining this information. Three more order clerks of about the same caliber as the original three were added to the study group. The new girls were rated as capable according to the existing store standards and practices. They knew nothing, of course, of the sales work of the three original girls. This permitted comparing the results of the new clerks with those of the original study clerks while handling the same type of customers' calls coming in over a common group of telephone lines.

After observing nearly 3,000 calls, it was agreed that sufficient data had been obtained to make a reliable comparison between the results obtained by the three original girls (doing a selling job) and the three new girls (doing an order-taking or non-selling job). An analysis of these observations showed that the original study clerks were able to make helpful sales suggestions on about eighty per cent of the calls handled, closed sales on about twenty-seven per cent of the suggestions, and averaged about $1.20 per extra sale. These sales increased the value of the average telephone order to $3.00, as contrasted with an average of only $2.39 for the non-selling clerks. It appeared, therefore, that if steps could be taken to place and keep in operation for the entire force the procedures used by the three original study clerks, it might be possible to increase the annual dollar volume of business on incoming telephone calls by about twenty-five per cent, which amounted to over $200,000 in the store being studied. The study indicated that selling increases the time required to handle incoming calls from customers in the neighborhood of twenty per cent. The additional business obtainable from sales effort, however, seems in most instances to justify the added cost of sales work. During the observations, it was again noted that customers appreciate helpful sales suggestions and that there was no unfavorable reaction on customer relations.

It occurred to the telephone men that it would assist in doing a good job if the handling of incoming telephone calls from

store customers were considered as a "selling" rather than a "non-selling" function of the store. This would mean selecting managers of telephone order departments, supervisors, and order clerks because of ability and experience in sales work, as well as other necessary qualifications. There might also be an important psychological advantage in changing the title "Telephone Order Clerk" to "Telephone Sales Clerk."

Thorough training and supervision, the importance of which is so well recognized in the telephone business, would then be essential to obtain the best results in handling telephone order business. Without this, the expected benefits both in increased sales volume and in satisfactory service would be wholly dependent upon the ideas and actions of the individual telephone sales clerks.

Finally, it seems highly desirable that the interest of the advertising and merchandising people be encouraged. If advertising people are aware of the importance of the telephone as a merchandise outlet, they will want to take full advantage of it by showing the store telephone number prominently in newspaper advertisements and by carefully reviewing each item advertised to determine whether it should be featured for telephone as well as counter sales and mail orders. Once interested, the merchandising people will want to contribute their experience as to what to sell, when to sell it, and at what prices. They may also wish to discuss merchandising principles before group meetings of telephone personnel and give them demonstrations of merchandise and counter sales experience.

Essential Service Improvements

It is axiomatic that sales work, to be a beneficial and lasting part of any business, must be built upon the foundation of good service to customers. In the case of the telephone sales tests described, the study group was left with the strong impression that poor service might drive away much of the cream

of telephone order business, leaving only customers willing to tolerate such rebuffs as busy lines, slow answers, discourtesy, indifference, and delays while ordering by telephone: the same customers who crowd at bargain counters to secure "loss leader" and "low mark-up" merchandise. Furthermore, before most customers can be persuaded to buy, they must be in a pleasant frame of mind. Good service is pleasing to customers and whets their buying appetites.

It was the opinion of the study group that customers are quite reasonable and that their demands can be met without undue difficulty or expense. What steps should be taken, then, to build up pleasing, dependable service for telephone shoppers?

In the first place, store customers probably expect to be able to find the store's telephone number without difficulty. Stores can accommodate their telephone visitors by accurately and completely listing and advertising the store telephone numbers in the telephone directory, featuring the telephone number in their newspaper advertisements, printing it on letterheads and bills and inserts, announcing it during promotional radio broadcasts, and publicising it in every practical way.

Customers dislike delays on the telephone road to the store. A delay or report of "line busy" may be a detour to another store. A store's protection would be to provide adequate telephone facilities to accommodate customers speedily and smoothly at all times.

Customers naturally expect to be waited upon with reasonable promptness. Has the store a sufficient number of P.B.X. switchboard attendants and telephone clerks so that telephone visitors may receive attention without undue delay? Many store executives would be surprised if they knew how long customers are kept waiting after the P.B.X. operator has told them "I'll connect you."

Customers want to be waited upon by a person who has been properly trained and who serves customers in a pleasing,

helpful and efficient manner. Shouldn't telephone clerks make customers feel that it is a real pleasure to do business with the store by telephone? Customers do not want to be kept waiting on the line while the clerk looks up something, nor do they want to be transferred from clerk to clerk. And, finally, they expect that the action taken by the store as a result of their telephone visit will compare favorably with that resulting from a visit in person to the store. They expect orders to be accurately filled as to quality, quantity and price, deliveries to be prompt, and adjustments to be satisfactory. Does the store know whether it is meeting these expectations?

Incidentally, this phase of the investigation included a complete review of the telephone equipment used by telephone order clerks. A number of opportunities for improvement were found, resulting in the development of a small key cabinet known as the No. 4 Order Turret. It includes, among the features required by these clerks, an incoming line for receiving customer calls, an outgoing line for calling the selling and other departments of the store to obtain information for the customer, and a conference connection between the incoming and outgoing lines so that the customer, the telephone clerk and the counter clerk can all hear and be heard on the same connection. Much information was also developed on the pros and cons of dial versus manual P.B.X. switchboards, whether to handle calls by routing directly from the central office to a centralized group of telephone clerks or routing them by way of the store P.B.X. switchboard, various directory listing arrangements, and other pertinent data.

Department stores have a definite problem in providing adequate personnel and equipment for handling incoming telephone calls satisfactorily at all times, because of the large variations in the volume of telephone order business. The problem is comparable in complexity to that encountered in a telephone company central office. The volume of calls changes by days of the week, and by months and seasons of the year;

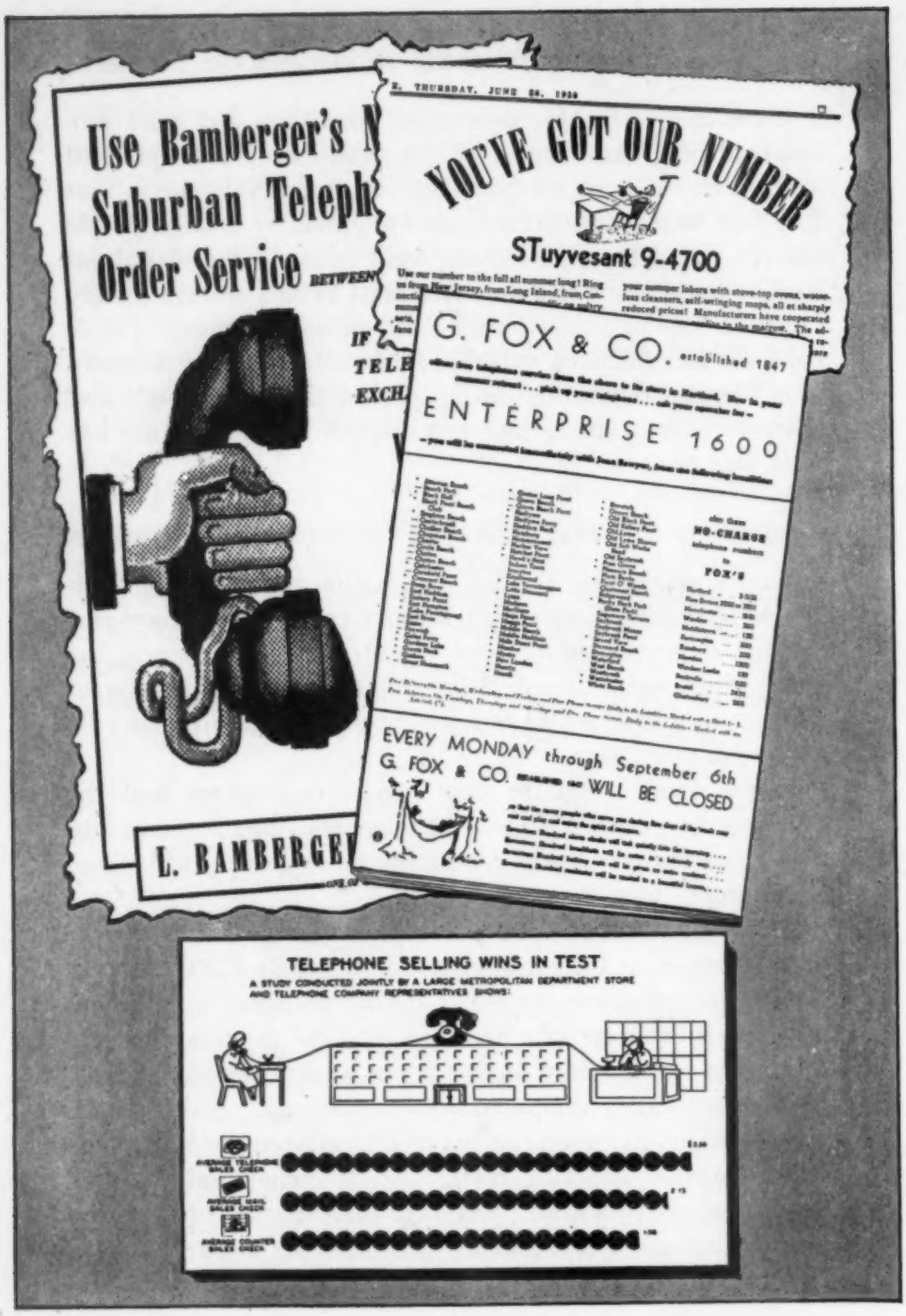
it is extremely sensitive to weather conditions and store promotional programs. Some of the variations can be planned for, and stores must maintain records of call volumes so that they will have an accurate basis for providing enough people and equipment for these varying work loads. Other variations may be unexpected and the store must have a reserve readily available for these situations. Without such planning, a store risks the loss of much valuable business and the impairment of its service reputation during peak work load periods and tolerates over-manning and extravagant payrolls during low work load periods.

Comparison of Telephone and Counter Order Business

Having established to their satisfaction that the dollar volume of business on incoming telephone calls could be increased through improvement in service and sales performance, the study group next turned their attention to the question of whether telephone selling is sufficiently profitable to justify its aggressive promotion.

It was decided that the most conclusive evidence could be established by breaking down the telephone order business into its major components and comparing these directly with those of the store's over-the-counter sales.

The comparison of these two types of business was accomplished through a further analysis of the nearly 3,000 observations discussed above, by searching out pertinent information available in store records, and by a study of the total business transacted by the store during a two weeks' period. Among the characteristics compared were "mark-up," which is the amount added to the cost of the merchandise in arriving at the selling price; "handling costs," which include salary, telephone, and delivery costs; "average sales check," which is the average amount per customer purchase per department (a measure on which many major store ratings are based); and


Use Bamberger's N
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YOU'VE GOT OUR NUMBER
STuyvesant 9-4700
G. FOX & CO. established 1847
ENTERPRISE 1600
EVERY MONDAY through September 6th
G. FOX & CO. WILL BE CLOSED
TELEPHONE SELLING WINS IN TEST
A STUDY CONDUCTED JOINTLY BY A LARGE METROPOLITAN DEPARTMENT STORE AND TELEPHONE COMPANY REPRESENTATIVES SHOWS:

TYPICAL NEWSPAPER ADVERTISEMENTS OF TWO LARGE DEPARTMENT STORES AT THE TOP, THE BACK COVER OF A CATALOG IN THE CENTER. THE BOTTOM ILLUSTRATION, FROM "SALES MANAGEMENT," GRAPHICALLY PORTRAYS SOME OF THE FINDINGS OF THE DEPARTMENT-STORE STUDY.

USING TELEPHONE DIRECTORIES TO SOLICIT ORDERS BY TELEPHONE. TWO BACK COVERS, A SPECIAL INSERT, AND THE "YELLOW PAGES," CARRIED THESE DEPARTMENT-STORE ADVERTISEMENTS.

"returns," which is the delivered merchandise which the customer requests the store to take back.

Telephone order business compared favorably with counter business. Delivery costs, of course, were higher, since all telephone orders must be delivered whereas this was found to be true of only about forty per cent of the counter orders. This, however, was offset by other cost factors more favorable to telephone business, as for example, sales cost. It was the opinion of the study group, therefore, that telephone order business is sufficiently profitable to justify its aggressive promotion.

An important related question was whether any substantial ratio of telephone orders represented sales which would otherwise be made over the store's counters. The observers made a special three-day check of all calls handled by the six telephone sales clerks, which showed that twenty-two per cent of the customers who called to inquire about or order merchandise by telephone voluntarily indicated that it was impossible, inconvenient, or unnecessary for them to come to the store. To this percentage must be added the number who made no comment but wouldn't or couldn't come to the store. This figure was so substantial that no further survey appeared necessary to establish the point. It was the opinion, therefore, that telephone order business is substantially additional business which the store might otherwise not obtain.

What the Study Proved

A report of the study was prepared. It presented ample evidence in support of the following general conclusions: (1) that telephone orders are at least as profitable as counter and mail orders; (2) that the dollar volume on incoming telephone calls could be increased about twenty-five per cent by a reasonable amount of salesmanship; (3) that this salesmanship is practicable and worth cultivating, and that it helps rather

than hurts the store's relations with its customers; and (4) that telephone promotion would bring the store much desirable business which it otherwise would not get, fully justifying a store policy of actively promoting this business.

The report was presented to the store's management and received their concurrence. During the year following the presentation, with the new procedures fully effective only part of the year, telephone order business in this store increased eighteen per cent over the volume of the preceding year, while counter business increased but four per cent. Furthermore, the store improved materially the quality of service rendered to telephone customers. The store management now regards the telephone as a merchandise outlet of real importance and includes it in their plans for moving merchandise.

The experience gained during the research work made possible the preparation of a manual on the management of a telephone order department. It has been used by telephone people while working with a number of department stores and has been found to be of considerable assistance in arriving at practical solutions to the various problems encountered.

Benefits to the General Public, to Department Stores, to the Telephone Companies

The general public depends more and more upon the telephone for purchasing. In addition to good merchandise at fair prices, they desire fast, courteous, accurate and dependable service. The help which telephone company representatives are giving to department stores makes it more likely that the public will receive such service. The stores will want to establish a reputation for providing a pleasing and dependable telephone service and will assign an adequate force of carefully chosen and properly trained people to telephone work.

The stores are assisted in availing themselves of and putting to profitable use the growing merchandising power of the tele-

phone. It improves their service reputation with the increasing number of customers who pay their visits to stores by telephone.

The telephone companies benefit no less. If stores are convinced of the desirability of telephone orders, they will want to encourage customers to do business with them, and will provide adequate telephone facilities to handle this business to the customers' satisfaction. They will want to stimulate telephone orders by including directory advertising in their promotional planning.

This improved service reduces the number of times all trunks are busy, speeds up the answering of calls, reduces the number of transferred calls, and adds to the efficiency of the telephone arrangements generally. In one store, for example, on peak busy days all trunks to the store were busy as many as 13,000 times in a day. This, of course, caused difficulties in the telephone company's central office and reacted adversely on the telephone service generally. It was found possible to reduce the "busies" in this store about seventy per cent, in spite of an increase of thirty-five per cent in telephone order business. In another store, some customers were delayed as long as ten minutes after being answered by the store P.B.X. because all of the lines to the telephone sales clerks were busy. In this case the answering time of telephone clerks was reduced from an average of about three minutes to approximately ten seconds.

In addition, the provision of more telephone service and equipment—more trunks, more extension lines, more order-taking positions—brings a corresponding increase in revenues to the telephone companies. The increased calling from store customers also reflects itself in increased toll as well as local message revenue, since the calling is by no means confined to the local service areas. While such direct message revenue benefits may be more apparent in message rate areas, all places derive the unquestioned benefits which accrue to the telephone

companies through the increase in the general value of telephone service which follows any extension of its usefulness to the public.

It is true that telephone company people are in no position to tell stores how to run their business. However, a telephone man who has taken the trouble to learn about the management and merchandising problems in department stores is in a much better position to serve as their communications adviser than if his knowledge were restricted to the functioning of telephone equipment. It is through such understanding of the other fellow's problems that telephone people can do a well-rounded job for any business concern—one which is mutually advantageous to the telephone company, its customer, and the general public.

F. Selwyn Gay

"Open House" at Hawthorne:
A Forward Step in Industrial Relations

DURING the last few years there has developed a growing realization that two factors, which are not yet fully appreciated by all of industry, stand out as important elements in our mass production age. One of these factors is the keen interest which exists on the part of the public in America's tools of production and in the men who operate them. The other is pride of craftsmanship.

That this pride, usually thought of in terms of the individual worker of an earlier and industrially less complex era, is still a characteristic of the American workman, even in mass-production industry, has become increasingly apparent as labor relations receive closer scrutiny. It was evident that such pride was seeking self-expression when a good many employees of the Hawthorne Works of the Western Electric Company requested permission now and again to bring their friends into the plant to see the shops, the equipment, and the various manufacturing processes. Out of the effort of the works management to meet these requests in an orderly and systematic way there grew last Spring—and grew beyond all expectation —the largest "open house" ever held by an industrial concern in this country.

Before the event was over—for it became an event and it lasted for two weeks—employees brought wives, husbands, friends and neighbors numbering more than 30,000 to see Western Electric at work. As the news spread, requests for permission to see what was going on at Hawthorne came from other thousands outside the circle of employees and their friends: from executives of the steel industry at Pittsburgh and

the automobile industry at Detroit, from women's clubs and service-club groups, from clergymen and editors, from people in all walks of life in Chicago and its environs. Simply because of limitation of capacity, many of these requests had to be refused. An attendance of 3,000 on the opening night grew until on one evening more than double that figure was reached, and the number of visitors during the whole period, including 16,000 people outside the employee circle, totaled 46,000.

Impressive as that figure is, the significance of Hawthorne's "open house" lies not in numbers, but rather in the demonstration it afforded of the employees' attitude toward the work they do and where and how they do it; and equally in the interest shown by their friends and the public in seeing a large plant in operation and gaining a conception of industry's contribution to the national life.

The Public's Interest in Manufacturing Processes

Hawthorne's "open house" is, of course, not an isolated event. For some time there has been accumulating evidence that the public has a lively curiosity in those great workshops which typify our machine civilization, as witnessed by the eager attendance at various exhibits illustrating mass production methods. Plans of other industries for such exhibits at the New York World's Fair of 1939 reflect the drawing power which the displays of various manufacturers have exerted at previous expositions—Chicago's Century of Progress, the Great Lakes and San Diego Expositions, and others. Searching for an explanation of the popularity of exhibits such as these, showing men and machines at work, it must be concluded that it arises from the public's realization that in them it sees operating before its eyes the methods by which America has achieved its high standard of living. Possessed of material advantages envied the world over, Americans have developed a natural desire to see for themselves how science and industry

transform raw materials into the finished articles which they daily use and enjoy.

Not content with setting up an exhibit illustrating an operation or two from its great and extensive processes, Western Electric invited the public in to see an entire section of its main factory in operation, with nearly two thousand employees working and scores of machines humming. The "open house" was not only the largest ever held by an industrial concern, but it marked an important step in the Bell System policy of acquainting the public with the operations necessary to furnish telephone service.

Acquainting Subscribers with Telephone Operations

The term "open house" as used in connection with the telephone is a familiar one to a fairly sizable and increasing portion of the public. During the last few years the operating companies of the Bell System have been throwing open their doors on scheduled days to public officials and business men, to church and civic groups, to subscribers and friends, and to the general public, asking them to "drop in and look us over." During 1937, an estimated total of 707,000 people attended such affairs in the Bell System.

Through these "open houses" the operating companies have been winning new friends for the Bell System and gaining among them a new appreciation of the part which telephone employees play in rendering a vital service. As one Western newspaper said, in commenting on the thousands of people who visited the local office, "they leave surprised and pleased, feeling that they have received an education, as they have, and go home with a better understanding of the huge enterprise and its problems."

Until Western Electric held its "open house" this Spring, those previously given in the Bell System centered in that part of the telephone industry most familiar to the public: the

central office. Curious about the connecting link between the person calling and the person called, telephone subscribers are eager to get a glimpse of the many things that happen between the placing and the completion of a call. Thus, visitors at an Associated Company "open house" are usually guided through the central office from top to bottom, seeing en route the impressive equipment and the operations which enter into the handling of various types of calls. In addition, there usually is a suggestion of some of the other phases of work necessary to provide telephone service, such as exhibits of cable and wire, of linesmen's tools, of a cable splicer's cart, etc. Western Electric's "open house" was a logical step in continuing to acquaint the public with the Bell System, a step that went one pace further back to the source, showing how the equipment is manufactured.

Showing the Making of Cable and Handsets

Because the Hawthorne Works covers 200 acres and its buildings contain 3,000,000 square feet of floor space, it was impossible to show visitors the entire manufacturing facilities, so areas containing operations most easily understood were selected. In less than a mile of walking, visitors could view the manufacture of cable, from the rolling of copper rods to the reeling of the finished cable, and could see the manufacture of the combined handset, from the raw material to the packing of the finished product.

The operations represented only about ten per cent of Hawthorne's facilities and required approximately two hours to view. It took 1,700 employees to man the area, leaving about 13,000 to take their families, friends and neighbors through the plant. Those who worked before the public gaze were given special hours, coming on duty late in the afternoon and working until eleven o'clock at night.

Long before the doors opened to the public at 5:45 each evening, crowds of people lined up within the grounds of the

plant, waiting to be admitted to the buildings. Then, throughout the evening, until eleven o'clock at night, came a steady stream of visitors.

There was no attempt to put on a "staged" performance, as far as manufacturing processes were concerned. Operations were carried out exactly as though the public were not present, and the crowd was allowed to see for itself what was going on. Although the management had been entirely prepared to absorb some loss of efficiency for the sake of letting the public enjoy their visit, the rate of production was not adversely affected by the sightseeing crowds.

A Route Was Mapped Out

As they came into the Works, visitors were handed a guide book which contained numbered paragraphs describing the operations similarly numbered by placards. By referring to the book, spectators were able to learn about the highlights of the processes they were witnessing. In addition, printed cards were used to identify the sequence of events in some of the more intricate operations. To enable the guests to get around easily, arrows pointed the way to the shops which were operating, and, once inside, the route was clearly marked by ropes and signs arranged so that traffic would flow evenly, and would pass the bests points of vantage with the least walking.

Some of the more spectacular processes, naturally, held the attention of the spectators longer than others, and at these the groups were asked to linger only a limited time so that the oncoming throngs could also have their turn. Many stood spellbound at seeing, for example, a 230-pound copper billet enter a huge furnace, emerge red hot, and writhe like a fiery snake through the rolling machines, finally coiling up into a quarter inch copper rod; and were fascinated to see the telephone itself being assembled so swiftly that the eye could scarcely follow.

Waiting to be Admitted: Some of the 46,000 People Who Visited the "Open House" at the Hawthorne Works

In This Shop, the Visitors in the Foreground Are Filing Past the Handset Assembly Lines; the Bay in the Center of the Picture Displays "Industrial Relations" Exhibits

Visitors Watch Intently as This Smiling Employee Operates a Machine Which Puts the Finishing Touches on Telephone Coils

Watching Phenol Plastic Presses which Transform Dust-like Resins into Glossy Telephone Parts Through Heat and Pressure. Note the Guide Books in Visitors' Hands

Also of interest to outsiders were the exhibits of the various Western Electric services for employees: charts showing the company's vacation, sickness, and benefit plans, its retirement schedules, and its policies on other phases of employee relations, and displays featuring safety goggles, safety shoes, and other precautionary devices used in the plant. These exhibits, as well as the results of safety guidance which are evident in the employees' conduct, made clear to visitors that the employees' well-being is of primary concern to Western Electric: that the industry has more than a pecuniary interest in the employee, and is endeavoring to keep him safe and sound not only in the plant but in the home and on the highway as well, for the good of the community as well as for the particular company for which he works.

The Plant Itself Made a Good Impression

The very physical aspect of the Hawthorne Works, with its well-kept lawn, dotted with flower beds, elicited favorable comments. Among them was that of a writer for the *Chicago Daily News*, who reported: "There was a sliver of a moon in the west last night and inside the big iron gates of the plant there was quiet. There were grass plots carefully groomed. There were well-paved streets and masses of ivy and the whole thing looked more like a college campus than an industrial manor. Lines of strolling couples wandered about, taking their time to enjoy the scene." Even the interior of the plant, well-lighted and clean, made a pleasant impression. That good housekeeping could be practiced in the factory as well as in the home pleased at least one woman, who was quoted in a newspaper as saying that she "wore white shoes and stockings and ended the long hike through the plant without a smudge on either."

There was evident throughout the "open house" the pride of the employees in the conditions under which they work, in

the skill necessary to perform most of the operations, in the friendly attitude of workers and management. Their attitude served to confirm the belief that the cornerstone of good public relations is the feeling of employees toward their company. As citizens of the community, they proved to be the best spokesmen for Western Electric's policies.

Knowing that their friends and neighbors were looking on, the employees who stayed at their posts during the "open house" exhibited a like pride in performing their jobs. As Royal F. Munger, financial editor of the *Chicago Daily News*, said, in his column which was entirely devoted to the Western Electric affair: "It is just that strength of pride in trained knowledge and accomplishment . . . that is the best asset of American industry."

An Event of National Significance Industrially

Western Electric's "open house" attracted recognition nationally, and its significance to industry in general was widely recognized. Besides devoting its entire front page to pictures showing scenes inside the Hawthorne plant, the *Manufacturers News* made the following comment on Western's "open house":

"To anyone privileged to attend this unique, practical demonstration of coöperation between employer and employee, two observations are paramount in their interest. First, and very important, it would be impossible to arrange such a program in an orderly and successful manner without already having won fairly, and by every rule of the game, the employee's good will. The management is to be congratulated not only for planning and executing so successful a project, but for putting on a 'show' without it in the least appearing like one. The second impressive point observed was the wholehearted industry and application of the individual worker to his station and work. This attitude and performance on

the part of each worker reflects the management's good work of the past years, for sustained, spontaneous interest must rest upon a secure foundation of good will."

Not only did all the Chicago dailies carry stories about the Western Electric industrial party, but newspapers in New York, Milwaukee, and other cities brought it to the attention of readers. In addition, articles or pictures about the "open house" were carried in such magazines of national circulation as *News Week, Advertising Age, Business Week, Electrical World,* and *National Safety News.*

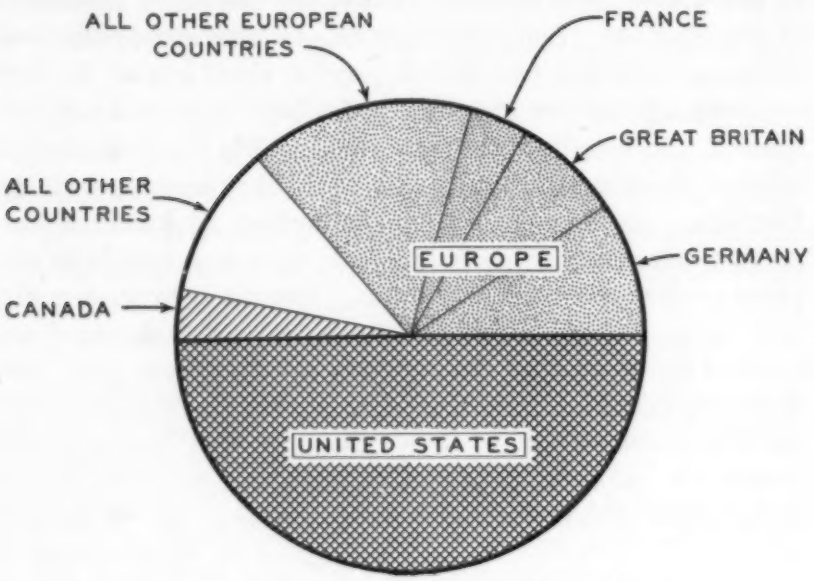
The deepest impression was made however, not upon those who read the cordial comments of editors, but upon the onlooker at Hawthorne who actually viewed the unfolding panorama of manufacture. Before his eyes he saw men and women and machines—the first two skilled, precise, alert, intent; the last truly remarkable for their fitness to their tasks—turning out some of the countless products upon which the greatness of modern America rests. In this case, the product was the telephone, and America's telephone system he knows is furnishing better service to more people than any system in any other country has been able to do. Having been an eye witness to the making of the telephone, he now understood another of the reasons for the high calibre of service it gives, and from this came the intimation that within the walls of other workshops, the country over, raw materials are similarly turned into products that give comfort and convenience and enjoyment—all contributing to the character of our civilization.

WILLIAM H. MCGAUGHEY

World's Telephone Statistics

January 1, 1937

STATISTICS of the world's wire communications facilities, compiled each year by the Chief Statistician's Division of the American Telephone and Telegraph Company from information supplied by telephone and telegraph organizations in every country of the world, have recently been published in a pamphlet under the title "Telephone and Telegraph Statistics

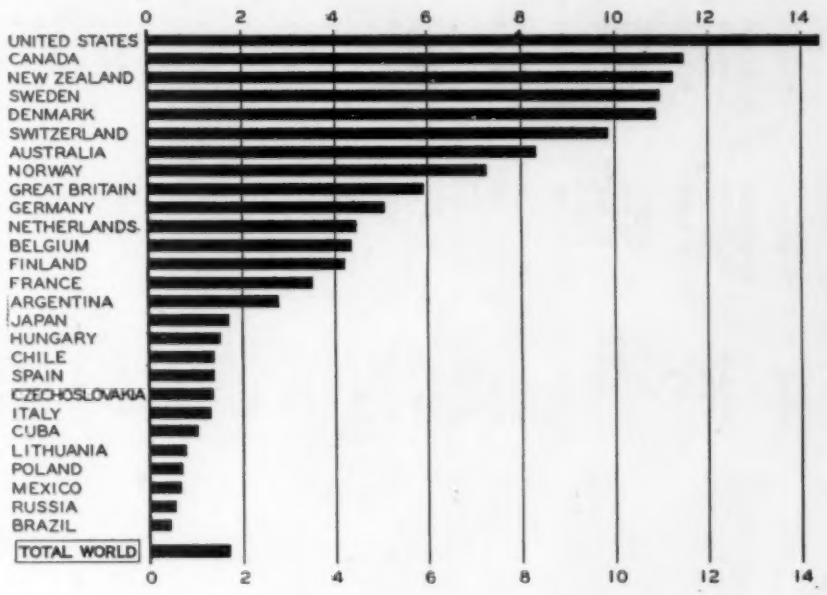


DISTRIBUTION OF THE WORLD'S TELEPHONES
January 1, 1937

of the World, January 1, 1937." Some of the outstanding facts shown by the tables and charts in this pamphlet are summarized in the following pages, all figures referring to the beginning of 1937 or, in the case of traffic data, to the year 1936.

World Totals

Of the 37,098,084 telephones in service throughout the world as of January 1, 1937, one-half, or 18,433,400, were in the United States*; one-third, or 13,513,152, were in Europe; and the remaining one-sixth of the world total were divided as follows: 1,690,978 in Asia, 1,519,023 in North and Central America outside the United States, 840,880 in Australia and



TELEPHONES PER 100 POPULATION
January 1, 1937

other islands in the Pacific Ocean, 765,435 in South America and 335,216 in Africa. Sixty-one per cent of the world's telephones were owned and operated by private companies, including some 4,105,353 privately operated telephones outside the United States, the remaining 39 per cent being operated by governmental agencies. Of the world total, 18,300,000 tele-

* The total number of telephones in this country is now estimated at 19,600,000.

TELEPHONE DEVELOPMENT OF THE WORLD, BY COUNTRIES

January 1, 1937

Countries	Number of Telephones: Government Systems	Private Companies	Total	Per Cent of Total World	Telephones Per 100 Population
NORTH AMERICA:					
United States	—	18,433,400	18,433,400	49.69%	14.39
Canada	194,624	1,071,604	1,266,228	3.41%	11.48
Central America	12,741	14,295	27,036	.07%	0.38
Mexico	1,337	123,442	124,779	.34%	0.66
West Indies—					
Cuba	610	43,972	44,582	.12%	1.02
Puerto Rico	531	14,272	14,803	.04%	0.84
Other W. I. Places	7,711	15,969	23,680	.06%	0.34
Other No. Am. Places	—	17,915	17,915	.05%	5.03
Total	217,554	19,734,869	19,952,423	53.78%	11.14
EUROPE:					
Austria	279,595	—	279,595	.76%	4.10
Belgium‡	361,685	—	361,685	.98%	4.34
Bulgaria	22,713	—	22,713	.06%	0.36
Czechoslovakia	207,287	—	207,287	.56%	1.36
Denmark†	17,323	391,552	408,875	1.10%	10.89
Finland	4,740	155,729	160,469	.43%	4.20
France	1,481,788	—	1,481,788	4.00%	3.51
Germany†	3,431,074	—	3,431,074	9.25%	5.08
Great Britain and No. Ireland	2,791,597	—	2,791,597	7.53%	5.93
Greece	8 083	30,092	38,175	.10%	0.55
Hungary	136,902	749	137,651	.37%	1.53
Irish Free State†	38,376	—	38,376	.10%	1.30
Italy	—	560,660	560,660	1.51%	1.31
Jugo-Slavia	55,314	—	55,314	.15%	0.36
Latvia†	71,769	—	71,769	.19%	3.64
Lithuania	19,588	—	19,588	.05%	0.78
Netherlands	382,173	—	382,173	1.03%	4.47
Norway**	127,212	83,396	210,608	.57%	7.26
Poland	133,782	111,142	244,924	.66%	0.71
Portugal	15,988	44,405	60,393	.16%	§0.83
Roumania	—	70,678	70,678	.19%	0.36
Russia¶	950,000	—	950,000	2.56%	0.55
Spain*	—	341,390	341,390	.92%	1.38
Sweden	686,076	1,490	687,566	1.85%	10.97
Switzerland	412,324	—	412,324	1.12%	9.86
Other Places in Europe	86,480	—	86,480	.23%	1.62
Total	11,721,869	1,791,283	13,513,152	36.43%	2.35

SOUTH AMERICA:					
Argentina	—	348,184	348,184	.94 %	2.77
Bolivia	—	2,450	2,450	.007%	0.08
Brazil	1,924	220,058	221,982	.60 %	0.45
Chile	—	63,055	63,055	.17 %	1.38
Colombia	8,400	33,000	41,400	.11 %	0.42
Ecuador	3,750	3,000	6,750	.02 %	0.27
Paraguay	—	2,843	2,843	.008%	0.32
Peru	—	23,883	23,883	.06 %	0.36
Uruguay	21,000	13,500	34,500	.09 %	1.68
Venezuela	648	16,740	17,388	.05 %	0.51
Other So. Am. Places	3,000	—	3,000	.008%	0.55
Total	38,722	726,713	765,435	2.06 %	0.80
ASIA:					
British India†	29,003	45,053	74,056	.20 %	0.02
China	85,000	92,000	177,000	.48 %	0 04
Japan†	1,197,129	—	1,197,129	3.23 %	1.70
Other Places in Asia	151,925	90,868	242,793	.65 %	0.14
Total	1,463,057	227,921	1,690,978	4.56 %	0.16
AFRICA:					
Egypt	56,579	—	56,579	.15 %	0.26
Union of South Africa†	169,419	—	169,419	.46 %	1.75
Other Places in Africa	107,186	2,032	109,218	.29 %	0.09
Total	333,184	2,032	335,216	.90 %	0.22
OCEANIA:					
Australia**	562,868	—	562,868	1.52 %	8.31
Hawaii	—	27,581	27,581	.08 %	6.95
Netherlands East Indies	38,098	3,831	41,929	.11 %	0.06
New Zealand†	178,599	—	178,599	.48 %	11.25
Philippine Islands	1,256	24,195	25,451	.07 %	0.18
Other Places in Oceania	4,124	328	4,452	.01 %	0.19
Total	784,945	55,935	840,880	2.27 %	0.89
TOTAL WORLD	14,559,331	22,538,753	37,098,084§	100.00 %	1.71

* January 1, 1936.
** June 30, 1936.
‡ February 28, 1937.
† March 31, 1937.
¶ U.S.S.R., including Siberia and Associated Republics. (Estimated)
§ Includes approximately 18,300,000 automatic or "Dial" telephones, of which about 43% are in the United States.

phones, including 7,825,000 in the United States, were dial telephones connected to machine switching exchanges.

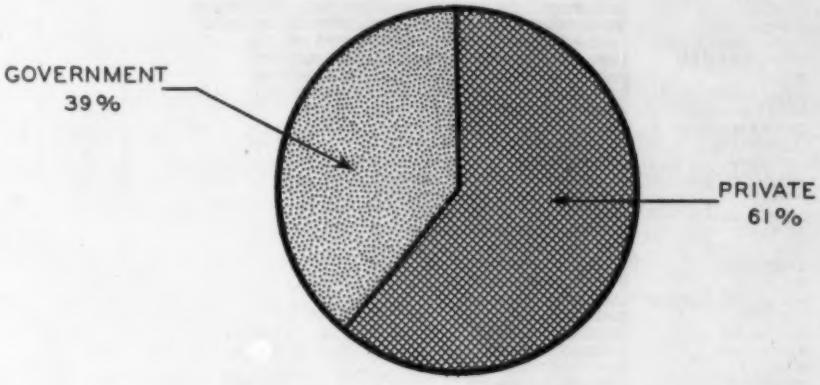
The world's aggregate wire mileage for communication purposes, 169,589,500 miles, is enough to circle the globe 6,810 times. Some 96 per cent of this wire is used for telephony, more than half of it in the United States and a third in Europe. The remaining 4 per cent of the total wire mileage is devoted to telegraph service.

Comparative Development by Countries

In measuring the comparative extent of telephone facilities, the number of telephones in service is commonly related to the population served. Such a measure is shown in the table "Telephone Development of the World, by Countries" and the accompanying chart entitled "Telephones per 100 Population." It will be seen that the United States, with one-half the world's telephones but only 6 per cent of the world's population, has nearly 16 times the telephone density of the rest of the world—14.39 telephones per 100 population as compared with 0.91. The average telephone development of Europe is equivalent to only 2.35 telephones per 100 inhabitants; that of the world as a whole is 1.71.

The largest telephone system outside the United States is in Germany, which has 3,431,074 telephones, or 5.08 for each 100 of the German population. Next in order come Great Britain and Northern Ireland, with 2,791,597 telephones, or 5.93 for every 100 inhabitants; France, with 1,481,788 telephones, or 3.51 per 100 population; Canada, with 1,266,228 telephones, or 11.48 per 100 population; and Japan, with 1,197,129 telephones, or 1.70 per 100 population. These five countries account in the aggregate for 27 per cent of the world total, their average development being 4.28 telephones per 100 population. In the remainder of the world, outside the United States and these five other countries with over 1,000,000 tele-

phones each, were 23 per cent of the world's telephones, the average development being 0.47 per 100 population. In addition to the United States and Canada, only three countries had better than one telephone for each 10 of the population, viz., New Zealand with 11.25, Sweden with 10.97 and Denmark with 10.89 per 100 population.

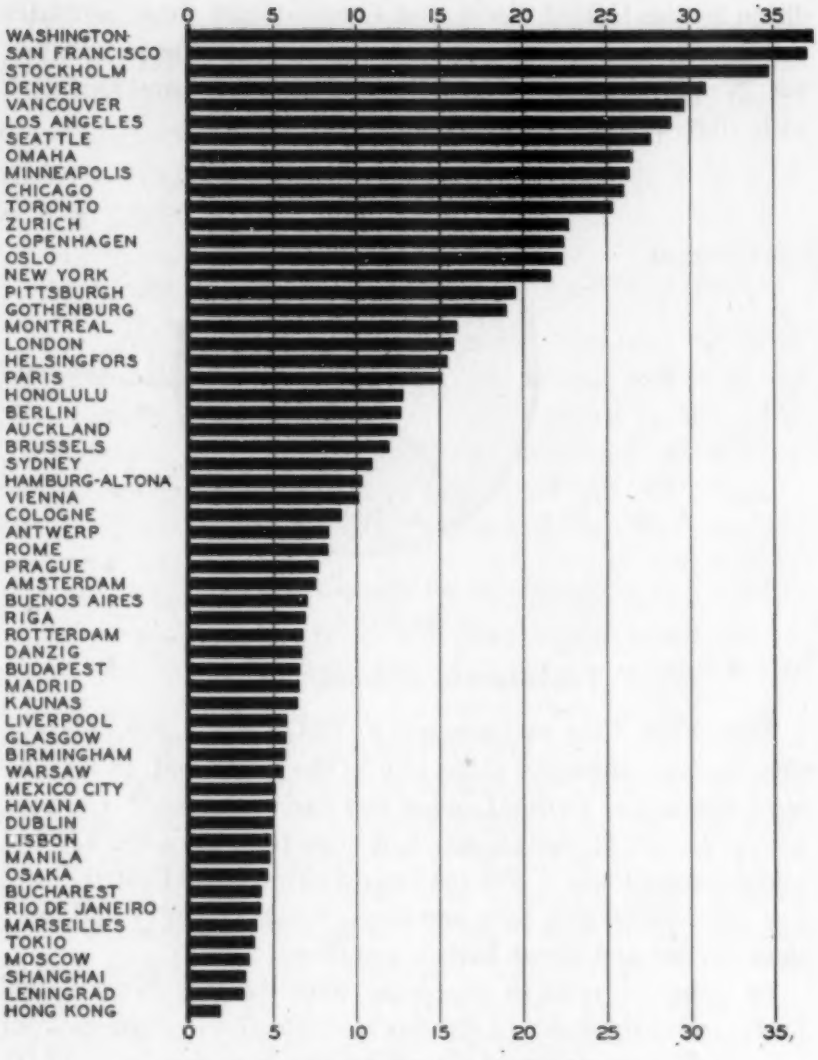


OWNERSHIP OF THE WORLD'S TELEPHONES
January 1, 1937

TELEPHONES IN LARGE CITIES

New York City on January 1, 1937, had 1,569,337 telephones, more than any other city in the world and, in fact, almost as many as Berlin, London and Paris combined. Chicago, with over 900,000 telephones, had more than twice the 428,844 telephones in Paris. The ten largest cities in the United States had more telephones than any single foreign country and more than France and Great Britain combined.

In point of relative telephone development, Washington, D. C., leads the cities of the world, with 37.43 telephones per 100 inhabitants, followed closely by San Francisco with 37.00. San Francisco's 262,733 telephones exceed the combined telephone facilities of China and British India, which together contain 40 per cent of the entire population of the world. Highest



TELEPHONES PER 100 POPULATION OF LARGE CITIES
January 1, 1937

among foreign cities in telephone development is Stockholm, with over one telephone to every three people. With the exception of Stockholm, telephone facilities in the world's best known foreign cities are far below American standards, as witness London whose 657,235 telephones correspond to only 15.82 per cent of the population, Paris with 15.13 per cent and Berlin with 12.67 per cent.

Telephones in Large and Small Communities

That telephone development in this country is relatively high regardless of the size of communities is indicated by the following figures, showing average telephone density in United States communities graded by number of inhabitants:

	Telephones Per 100 Population
10 cities with over 1,000,000 population	21.60
10 cities with 500,000 to 1,000,000 population	21.97
34 cities with 200,000 to 500,000 population	19.28
All communities with 50,000 to 200,000 population	17.98
All communities with less than 50,000 population	10.33

It will be seen that, while greater telephone density prevails in the larger cities, resulting primarily from greater concentration of business activities therein, the average telephone density in the smaller towns and rural areas—the places with less than 50,000 population—exceeds one telephone for every ten people. This telephone development in the more sparsely settled areas of the United States is higher than that found in all but two European countries in their entirety, and even exceeds the telephone development of important capital cities such as Budapest, Moscow, Prague, Rome, The Hague, Tokio, Vienna and Warsaw. The total number of telephones serving these smaller American communities exceeds the aggregate number of telephones in France, Germany and Great Britain.

No city in this country contains as much as nine per cent of the total number of telephones in the country. Abroad, however, the tendency seems to be toward concentration of the ex-

TELEPHONE DEVELOPMENT OF LARGE CITIES

January 1, 1937

Country and City (or Exchange Area)	Estimated Population (City or Exchange Area)	Number of Telephones	Telephones Per 100 Population
ARGENTINA:			
Buenos Aires	3,040,000	213,428	7.02
AUSTRALIA:			
Adelaide	317,000	32,204	10.16
Brisbane	313,000	31,255	9.99
Melbourne	1,018,000	119,000	11.69
Sydney	1,267,000	138,908	10.96
AUSTRIA:			
Graz	153,000	11,657	7.62
Vienna	1,877,000	190,192	10.13
BELGIUM:#			
Antwerp	529,000	44,310	8.38
Brussels	984,000	117,900	11.98
Liege	422,000	26,913	6.38
BRAZIL:			
Rio de Janeiro	1,850,000	78,402	4.24
CANADA:			
Montreal	1,060,000	170,037	16.04
Ottawa	191,000	37,634	19.70
Toronto	787,800	199,727	25.35
Vancouver	190,000	56,317	29.64
CHILE:			
Santiago	829,000	30,351	3.66
CHINA:			
Hong Kong	870,000	16,054	1.85
Shanghai††	1,660,000	56,020	3.37
CUBA:			
Havana	706,000	35,752	5.06
CZECHOSLOVAKIA:			
Prague	950,000	73,057	7.69
DANZIG:			
Free City of Danzig	275,000	18,432	6.70
DENMARK:			
Copenhagen	856,000	191,908	22.42
FINLAND:			
Helsingfors	275,000	42,607	15.49
FRANCE:			
Bordeaux	260,000	21,591	8.30
Lille	202,000	17,544	8.69
Lyons	655,000	37,561	5.73
Marseilles	920,000	36,507	3.97
Paris	2,835,000	428,844	15.13
GERMANY:†			
Berlin	4,258,000	539,662	12.67
Breslau	624,000	45,182	7.24
Cologne	762,000	69,492	9.12
Dresden	800,000	68,764	8.60
Dortmund	577,000	26,180	4.54
Essen	672,000	33,139	4.93
Frankfort-on-Main	651,000	64,252	9.87
Hamburg-Altona	1,630,000	168,322	10.33
Leipzig	757,000	68,577	9.06
Munich	844,000	86,718	10.27
GREAT BRITAIN AND NO. IRELAND:†			
Belfast	415,000	21,585	5.20
Birmingham	1,248,000	71,043	5.69
Bristol	443,000	27,047	6.11
Edinburgh	457,000	40,495	8.86
Glasgow	1,130,000	64,761	5.73
Hull	352,000	22,166	6.30
Leeds	487,000	32,399	6.65
Liverpool	1,249,000	72,433	5.80
London—			
(City and County of London)	4,155,000	657,235	15.82
Manchester	995,000	64,362	6.47
Newcastle	516,000	24,571	4.76
Sheffield	512,000	24,966	4.88
HAWAII:			
Honolulu	147,000	18,818	12.80
HUNGARY:			
Budapest	1,400,000	92,027	6.57
Szeged	140,000	2,209	1.58
IRISH FREE STATE:†			
Dublin	472,000	23,412	4.96

TELEPHONE DEVELOPMENT OF LARGE CITIES (Concluded)

January 1, 1937

Country and City (or Exchange Area)	Estimated Population (City or Exchange Area)	Number of Telephones	Telephones Per 100 Population
ITALY:			
Milan	1,114,000	95,097	8.54
Naples	875,000	28,283	3.23
Rome	1,179,000	98,147	8.32
JAPAN:†			
Kobe	938,000	40,564	4.32
Kyoto	1,107,000	46,903	4.24
Nagoya	1,120,000	39,969	3.57
Osaka	3,102,000	144,494	4.66
Tokio	6,086,000	236,228	3.88
LATVIA:†			
Riga	388,000	26,903	6.93
LITHUANIA:			
Kaunas	107,000	6,906	6.45
MEXICO:			
Mexico City	1,410,000	71,466	5.07
NETHERLANDS:			
Amsterdam	783,000	59,209	7.56
Haarlem	168,000	13,317	7.93
Rotterdam	621,000	41,895	6.75
The Hague	529,000	51,024	9.65
NEW ZEALAND:†			
Auckland	207,000	25,859	12.49
NORWAY:**			
Oslo	250,000	55,967	22.39
PHILIPPINE ISLANDS:			
Manila	425,000	20,316	4.78
POLAND:			
Lodz	960,000	16,621	1.73
Warsaw	1,320,000	73,672	5.58
PORTUGAL:			
Lisbon	670,000	32,504	4.85
ROUMANIA:			
Bucharest	800,000	34,055	4.26
RUSSIA:*			
Leningrad	3,100,000	99,463	3.21
Moscow	4,100,000	144,669	3.53
SPAIN:*			
Barcelona	1,110,000	55,569	5.01
Madrid	1,015,000	66,148	6.52
SWEDEN:			
Gothenburg	263,000	50,026	19.02
Malmö	144,000	24,275	16.86
Stockholm	452,000	157,220	34.78
SWITZERLAND:			
Basel	153,000	35,258	23.04
Berne	115,000	27,552	23.96
Geneva	149,000	28,748	19.29
Zurich	277,000	62,955	22.73
UNITED STATES: (See Note)			
New York	7,238,000	1,569,337	21.68
Chicago	3,460,000	900,653	26.03
Los Angeles	1,365,000	394,403	28.89
Pittsburgh	1,031,900	201,935	19.57
Total 10 cities over 1,000,000 Population	22,274,800	4,811,304	21.60
Milwaukee	781,000	147,816	18.93
San Francisco	710,000	262,733	37.00
Washington	572,500	214,308	37.43
Minneapolis	511,000	134,563	26.33
Total 10 cities with 500,000 to 1,000,000 Population	6,623,100	1,455,118	21.97
Seattle	420,600	116,238	27.64
Denver	312,500	96,737	30.96
Omaha	242,900	64,553	26.58
Hartford	241,200	59,382	24.62
Total 34 cities with 200,000 to 500,000 Population	10,471,700	2,018,965	19.28
Total 54 cities with more than 200,000 Population	39,369,600	8,285,387	21.05

NOTE: There are shown, for purposes of comparison with cities in other countries, the total development of all cities in the United States in certain population groups, and the development of certain representative cities within each of such groups.

* January 1, 1936.
** June 30, 1936.
# February 28, 1937.
† March 31, 1937.
†† International Settlement and French Concession.

TELEPHONE DEVELOPMENT OF LARGE AND SMALL COMMUNITIES

January 1, 1937

Country	Service Operated by (See Note)	Number of Telephones		Telephones Per 100 Population	
		In Communities of 50,000 Population and Over	In Communities of less than 50,000 Population	In Communities of 50,000 Population and Over	In Communities of less than 50,000 Population
Australia**	G.	341,200	221,668	10.41	6.34
Austria	G.	216,982	62,613	9.85	1.36
Belgium#	G.	254,977	106,708	7.15	2.24
Canada	P. G.	689,594	576,634	19.35	7.73
Czechoslovakia	G.	106,263	101,024	5.99	0.75
Denmark	P.	216,663	192,212	20.08	7.18
Finland	P.	60,007	100,462	12.00	3.03
France	G.	818,517	663,271	7.72	2.12
Germany†	G.	2,232,749	1,198,325	7.84	3.07
Great Britain and No. Ireland†	G.	2,062,000	798,000	7.65	3.97
Hungary	G.	104,007	33,644	4.92	0.49
Japan†	G.	805,735	391,394	3.64	0.81
Netherlands	G.	246,768	135,405	6.99	2.69
New Zealand†	G.	74,111	104,488	13.19	10.19
Norway**	P. G.	83,707	126,901	20.62	5.09
Poland	P. G.	145,810	99,114	2.79	0.34
Spain*	P.	211,528	129,862	4.07	0.66
Sweden	G.	267,151	420,415	24.76	8.10
Switzerland	G.	188,550	223,774	21.04	6.81
Union of South Africa†	G.	104,082	65,337	7.42	0.79
United States	P.	10,581,802	7,851,598	20.31	10.33

Note: P. indicates that the telephone service is wholly or predominantly operated by private companies, G. wholly or predominantly by the Government, and P. G. by both private companies and the Government. See first table.

* January 1, 1936.
** June 30, 1936.
# February 28, 1937.
† March 31, 1937.

isting telephone facilities in the larger towns and cities. Thus, over 23 per cent of all British telephones are found in the city and county of London, while there are more than 25 people to each telephone in the less populated British communities; Berlin accounts for over 15 per cent of all German telephones, in contrast to a small town development of 31 people per telephone; 29 per cent of all France's telephones are concentrated in Paris, whereas there are 47 people on the average for each telephone in French communities with less than 50,000 population.

Telephone Traffic

With access to some 93 per cent of the world's telephones, currently estimated at close to 40 million, telephone users in the United States completed approximately 27 billion local and long distance conversations during the year 1936. This corresponds to 850 messages per second and to 210 messages per average capita. Available statistics indicate an annual calling rate of only 12½ telephone conversations per average capita in the rest of the world, indicating that in this country the telephone is approximately 17 times more useful than appears to be the case elsewhere in the world.

K. Fick